USDA United States Department of Agriculture

Natural Resources Conservation Service

Idaho Basin Outlook Report January 1, 1999

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

Your local Natural Resources Conservation Service Office
or
Natural Resources Conservation Service
Snow Surveys
9173 West Barnes Drive, Suite C
Boise, ID 83709-1574
(208) 378-5740

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

JANUARY 1, 1999

SUMMARY

After a dry fall, water year 1999 is off to a great start. Heavy snowfalls the last week of December boosted snow levels in the northern half of the state. Snow water content levels range from 165% of average in the west-central Idaho mountains to 80% of average in the southern corners of Idaho. Reservoir carryover is above average across the state with most reservoirs or reservoir systems reporting 65-75% of capacity. Streamflow forecasts range from 125% of average in the west-central mountains to 65% in southern Idaho. With a little more than half the snow season still to come, 1999 is shaping-up to be good water year.

SNOWPACK

January 1 snow water content levels are 110-160% of average north of the Snake River. The upper Snake River basin reports a normal snowpack. South of the Snake River, the snowpack is 80% of average in the Owhyee and Bear River basins and normal in Oakley and Salmon Falls basins. The highest snowpacks in the state are 165% of average in the Lochsa River basin and headwaters of the North Fork Payette, Little Salmon, South Fork Salmon and Weiser rivers.

PRECIPITATION

The new water year started October 1 and brought below normal precipitation across the entire state, ranging from 30-70% of average in October. November saw more moisture in the northern 2/3s of the state (120-150% of average) while southern Idaho received 80-90% of its normal amounts. Clear and dry weather in the first half of December gave way to abundant moisture falling in less than a week at the end of the month. December precipitation ranged from 140% of average in the Clearwater basin to 65% of average across the southern Idaho border. Cumulative precipitation for the water year shows a similar trend and ranges from 125% of average in the Clearwater basin to about 75% in the Southside Snake River basins. Many SNOTEL sites reported minimum daily temperatures in the -20 to -35 degree Fahrenheit range during the Arctic cold spell in mid-December.

RESERVOIRS

Above normal snowpacks and precipitation the past few years have resulted in good reservoir carryover storage. Nearly all reservoirs and controlled lakes in Idaho are reporting above average storage for December 31. Oakley and Salmon Falls reservoirs are about 50% of capacity while the other reservoirs in Idaho are 65-75% of capacity. The controlled lakes in the Panhandle Region are near their normal levels for this time of year.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Warm temperatures and rain falling as high as 6,000 feet in elevation melted some of the lower elevation and valley snowpack and produced rises in low elevation streams. Small ice jams occurred with the increased streamflow. Streams were at baseflow levels and able to absorb the typical mid-winter runoff. October-December streamflows were near normal indicating that springs, soil moisture and groundwater sources are still providing good baseflows from the past four years of normal or above normal moisture. Many springs were recharged over the past few years and flowing at the highest levels in years. January 1 most probable streamflow forecasts call for 105-120% of average runoff for the northern 2/3s of the state, with a few rivers forecast at higher volumes. Rivers south of the Snake River are forecast in the 60-80% of average range.

RECREATION

The winter recreation season is off to a great start in Idaho. Nearly a week of heavy snowfalls in the west-central mountains doubled the amount of snow on the ground in some winter recreation areas. However, the heavy snowfall also increased avalanche danger and closed roads in some areas. Rain falling in late December in the central mountains created a crust layer on top of the lighter density snow. As a result, backcountry travel through the snow will be difficult until the snowpack settles. The highest snowpacks in the state (160% of average) are located in the Lochsa River basin and the headwaters of the North Fork Payette, Little Salmon, South Fork Salmon and Weiser rivers. A near normal snowpack or better across most of the state should provide excellent water-based recreation this summer.

WHAT'S NEW FOR WATER YEAR 1999!!

Starting in January 1999, NRCS will provide end-of-month reservoir storage forecasts in acre-feet for Oakley and Salmon Falls reservoirs. These forecasts are based on statistical regression equations and have a good correlation with reservoir storage several months in advance.

CHECK OUT OUR WEB SITE AT: http://idsnow.id.nrcs.usda.gov

Want to find out how deep the snow is at Galena Summit, Jackson Peak or South Mountain without leaving your office or home? This information is now being provided for eight sites by new ultrasonic snow depth sensors. The sensors monitor depth of snow on the ground and new snowfall amounts and can be used to determine snowpack densities of new snowfall and when melting may start. After you get to our web site, click on "SNOTEL Data." From there go down the list to "SNOTEL Depth Sensor Data."

The eight sites are:

Boise River Basin	**Other Locations**
Atlanta Summit	Galena Summit, North of Sun Valley
Graham Guard Station	Gunsight Pass, Upper Green River NR Pinedale, WY
Jackson Peak	South Mountain, Owyhee Mountains NR Jordan Valley, OR
Mores Creek Summit	Franklin Basin, Bear River Basin NR Preston

Here's a list of other information you'll find at our web site:

Current Day SNOTEL Snow Water Content and Precipitation Update Report

Current Year Daily SNOTEL Data for Individual Sites, including snow water content, precipitation, and air temperature data

SNOTEL SWE and Precipitation Rates of changes Last 4 Days

Latest 1, 3, 6 hourly SNOTEL data for all Western States

1961-1990 SNOTEL Snow Water Equivalent and Precipitin Averages

Locational information of SNOTEL sites

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)
As of January 1, 1999

The Surface Water Supply Index (SWSI) is predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

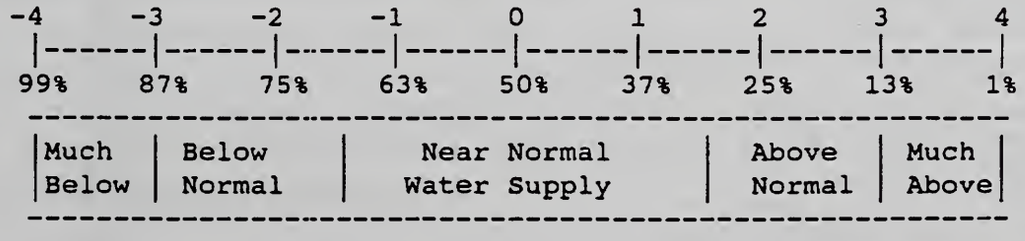
SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Department of Water Recourses
PacifiCorp

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	0.4	1996	NA
CLEARWATER	2.2	1993	NA
SALMON	2.2	1983	NA
WEISER	2.2	1996	NA
PAYETTE	2.7	1995	NA
BOISE	1.6	1995	-2.6
BIG WOOD	0.8	1993/96	-1.4
LITTLE WOOD	1.6	1978/80	-2.1
BIG LOST	1.5	1980	-0.8
LITTLE LOST	0.3	1980	0.0
HENRYS FORK	1.3	1993	-3.3
SNAKE (AMERICAN FALLS)	1.9	1975	-2.0
OAKLEY	2.0	1979	0.0
SALMON FALLS	2.5	1996	0.0
BRUNEAU	-1.3	1973	NA
OWYHEE	1.2	1996	NA
BEAR RIVER	-0.4	1997	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



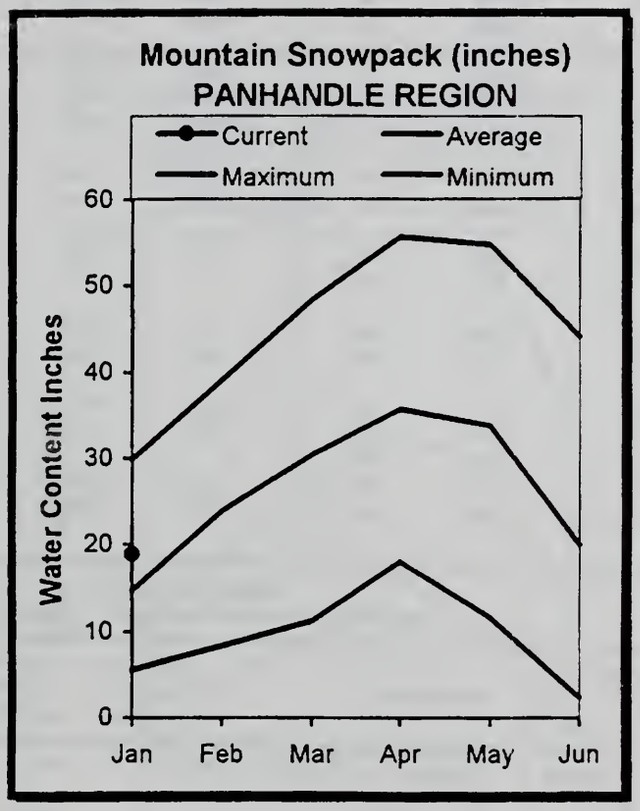
Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

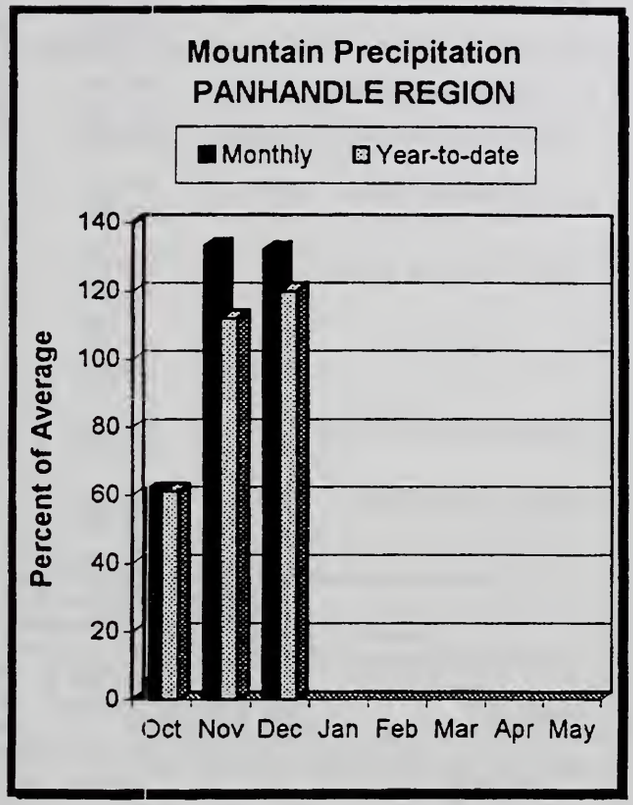
B A S I N - W I D E S N O W P A C K S U M M A R Y

JANUARY 1999

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Kootenai ab Bonners Ferry	208%	136%
Moyie River	232%	134%
Priest River	228%	154%
Pend Oreille River	192%	130%
Rathdrum Creek	161%	120%
Hayden Lake	0%	0%
Coeur d'Alene River	257%	122%
St. Joe River	159%	104%
Spokane River	195%	117%
Palouse River	0%	0%
North Fork Clearwater	202%	137%
Lochsa River	189%	156%
Selway River	169%	145%
Clearwater Basin Total	188%	137%
Salmon River ab Salmon	223%	124%
Lemhi River	166%	116%
Middle Fork Salmon River	233%	130%
South Fork Salmon River	237%	157%
Little Salmon River	239%	163%
Salmon Basin Total	210%	138%
Mann Creek	209%	159%
Weiser River	232%	165%
North Fork Payette	223%	164%
South Fork Payette	216%	122%
Payette Basin Total	218%	147%
Middle & North Fork Boise	220%	120%
South Fork Boise River	214%	114%
Mores Creek	200%	139%
Boise Basin Total	212%	120%
Canyon Creek	260%	65%
Big Wood ab Magic	215%	113%
Camas Creek	225%	116%
Big Wood Basin Total	215%	113%
Little Wood River	226%	111%
Fish Creek	0%	0%
Big Lost River	206%	128%
Little Lost River	237%	122%
Birch-Medicine Lodge Creeks	208%	145%
Camas-Beaver Creeks	203%	92%
Henrys Fork-Falls River	163%	116%
Teton River	125%	85%
Snake above Jackson Lake	149%	112%
Gros Ventre River	143%	107%
Hoback River	167%	94%
Greys River	177%	93%
Salt River	160%	97%
Snake above Palisades	156%	105%
Willow Creek	150%	98%
Blackfoot River	162%	92%
Portneuf River	129%	88%
Snake abv American Falls Resv	153%	102%
Raft River	180%	108%
Goose-Trapper Creeks	197%	105%
Salmon Falls Creek	142%	102%
Bruneau River	131%	91%
Owyhee Basin Total	167%	81%
Smiths & Thomas Forks	142%	92%
Bear River ab WY-ID line	121%	74%
Montpelier Creek	181%	81%
Mink Creek	162%	80%
Cub River	121%	86%
Bear River ab ID-UT line	127%	76%
Malad River	97%	78%
Green River ab Warren Bridge	168%	96%
Upper Green River (West Side)	176%	93%
New Fork River	157%	101%
Big Sandy River/Eden Valley	184%	117%
Green River above Fontenelle	171%	95%
Hams Fork River	151%	88%
Green River above Flaming Gorge	143%	94%

PANHANDLE REGION
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

December precipitation was 132 % of average. Cumulative precipitation for the water year is 120% of average, 2nd highest in the state. Snowpacks range from 120-130% of average for most basins in this region. Overall, the snowpack in the Panhandle Region is 128% of average. Bear Mountain SNOTEL site, located north of Clark Fork at 5,400 feet along the Idaho-Montana border, has 40 inches of snow water; January 1 average is 22 inches. On average, Bear Mountain reaches 40 inches of snow water in mid-February. Storage in the natural lakes in the area is normal for this time of year. Streamflow forecasts call for slightly above normal runoff.

PANHANDLE REGION
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<=== Drier ===== Future Conditions ===== Wetter ===>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUN	4028	5336	5930	104	6524	7832	5701
	APR-JUL	5093	6721	7460	104	8199	9827	7199
	APR-SEP	5858	7730	8580	104	9430	11302	8275
CLARK FK at Whitehorse Rpds (1,2)	APR-JUN	7050	9942	11255	112	12568	15460	10050
	APR-JUL	8169	11560	13100	112	14640	18031	11730
	APR-SEP	8973	12705	14400	112	16095	19827	12910
PEND OREILLE Lake Inflow (1,2)	APR-JUN	7819	11313	12900	113	14487	17981	11390
	APR-JUL	9417	13119	14800	113	16481	20183	13150
	APR-SEP	10213	14261	16100	112	17939	21987	14370
PRIEST nr Priest River (1,2)	APR-JUL	566	779	875	108	971	1184	814
	APR-SEP	606	832	935	108	1038	1264	868
COEUR D'ALENE at Enaville	APR-JUL	584	739	845	110	951	1106	770
	APR-SEP	622	781	889	110	997	1156	809
ST.JOE at Calder	APR-JUL	916	1097	1220	104	1343	1524	1169
	APR-SEP	980	1165	1291	104	1417	1602	1237
SPOKANE near Post Falls (2)	APR-JUL	1985	2452	2770	105	3088	3555	2633
	APR-SEP	2067	2545	2870	105	3195	3673	2730
SPOKANE at Long Lake	APR-JUL	2307	2793	3123	106	3453	3939	2936
	APR-SEP	2504	3008	3351	106	3694	4198	3159

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2604.0	2579.0	2586.0
FLATHEAD LAKE	1791.0	800.5	925.5	1305.0
NOXON RAPIDS	335.0	312.1	327.4	317.1
PEND OREILLE	1561.3	910.2	894.9	722.0
COEUR D'ALENE	238.5	114.5	56.8	130.5
PRIEST LAKE	119.3	59.0	54.0	55.3

PANHANDLE REGION
Watershed Snowpack Analysis - January 1, 1999

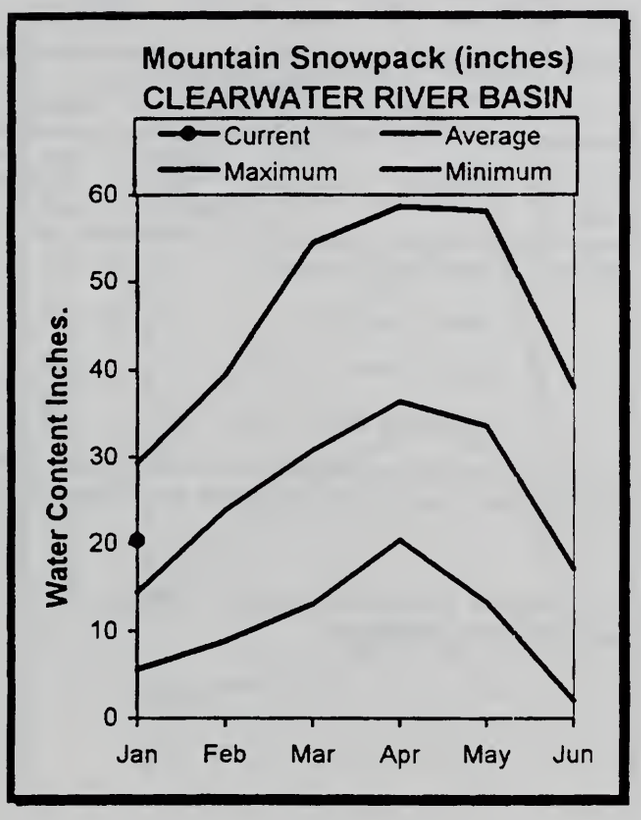
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	11	208	135
Moyie River	2	343	144
Priest River	4	222	154
Pend Oreille River	66	190	130
Rathdrum Creek	3	165	116
Hayden Lake	0	0	0
Coeur d'Alene River	5	257	122
St. Joe River	2	159	104
Spokane River	10	200	116
Palouse River	1	0	0

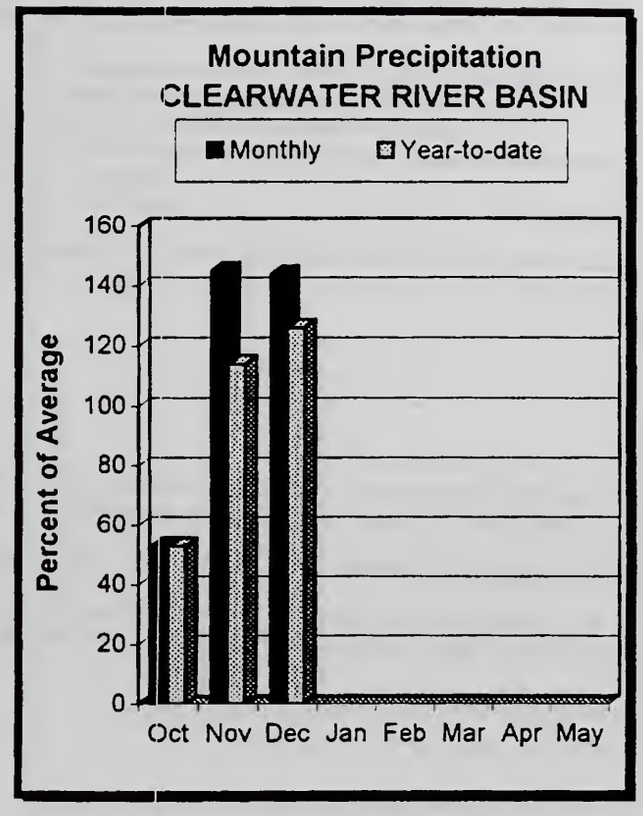
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

December precipitation was 144% of average, the highest in the state. Snowpack is well above average as a result of the jet stream bringing abundant moisture to north-central Idaho. Snowpacks range from 156% of average in the Lochsa basin to 137% for the Clearwater basin as a whole. An above average snowpack in the Clearwater basin is typical during La Nina type years. Of the previous 9 La Nina years, the April 1 snowpack in the Clearwater basin has ranged from 106-168% of average. Dworshak Reservoir is 101% of average, 70% of capacity. Plans are being formulated for drafting Dworshak Reservoir in anticipation of the above average volumes. Inflow forecast for Dworshak Reservoir is 115% of average. Clearwater River at Spalding is forecast at 114% of average. The April-July runoff at Spalding during other La Nina years has ranged from 102% of average in 1989 to a record high 174% of average in 1972. Water supplies should be plentiful this year, especially if the Pacific Northwest continues to receive the brunt of winter storms this season.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESV INFLOW (1,2)	APR-JUL	2138	2800	3100	115	3400	4062	2687
	APR-SEP	2299	2988	3300	116	3612	4301	2858
CLEARWATER at Orofino (1)	APR-JUL	3051	4570	5260	112	5950	7469	4718
	APR-SEP	3207	4811	5540	111	6269	7873	4976
CLEARWATER at Spalding (1,2)	APR-JUL	4952	7522	8690	114	9858	12428	7618
	APR-SEP	5223	7944	9180	114	10416	13137	8052

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2410.9	2053.1	2396.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - January 1, 1999

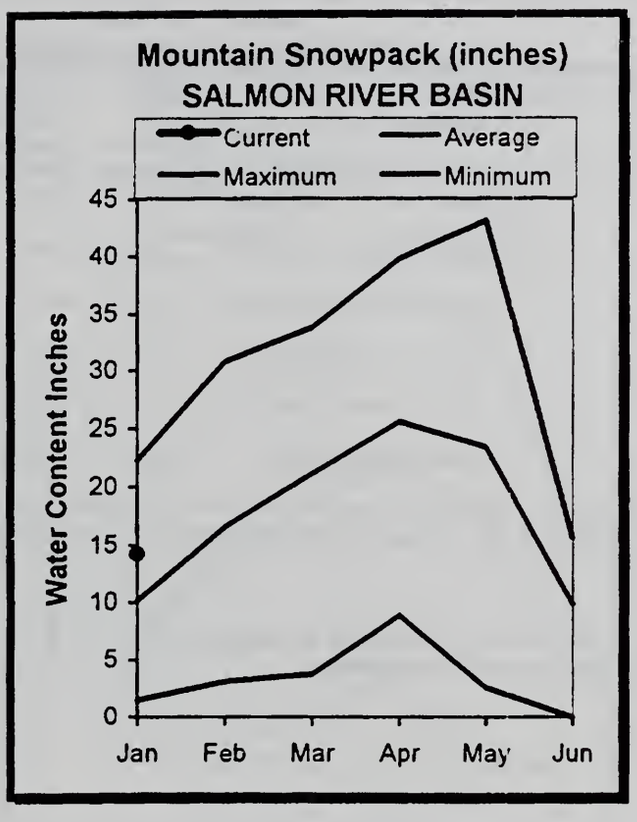
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	10	202	137
Lochsa River	3	189	156
Selway River	4	169	145
Clearwater Basin Total	17	188	137

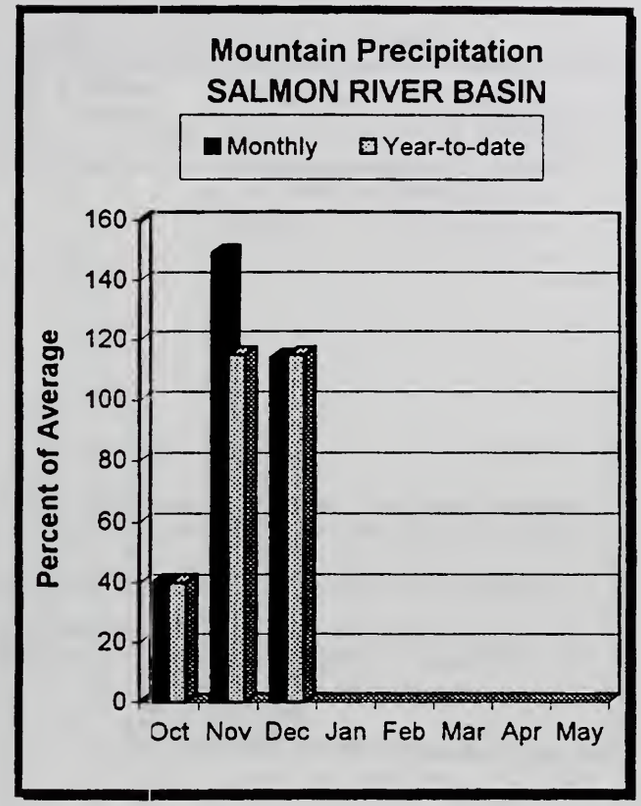
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

Winter storms brought abundant snowfall amounts to the west-central mountains. Snowpack levels are the highest in the state in the Little Salmon and South Fork Salmon basin at 160% of average. Snow water equivalent data on January 1 at Squaw Flat and Brundage Reservoir SNOTEL sites are the 2nd and 4th highest, respectively, since records started in 1961. Elsewhere in the basin, snow levels are 130% of average for the Middle Fork Salmon River and 116% for the Lemhi River. Overall, the Salmon basin snowpack is 138% of average. December precipitation was 114% of average and is 115% for the water year. Streamflow forecasts call for 114% of average flow for the Salmon River at Salmon and 110% for the Salmon River at White Bird..

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	514	817	955	110	1093	1396	869
	APR-SEP	602	958	1120	110	1282	1638	1019
SALMON at White Bird (1)	APR-JUL	4431	6046	6780	114	7514	9129	5956
	APR-SEP	4917	6707	7520	114	8333	10123	6602

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - January 1, 1999

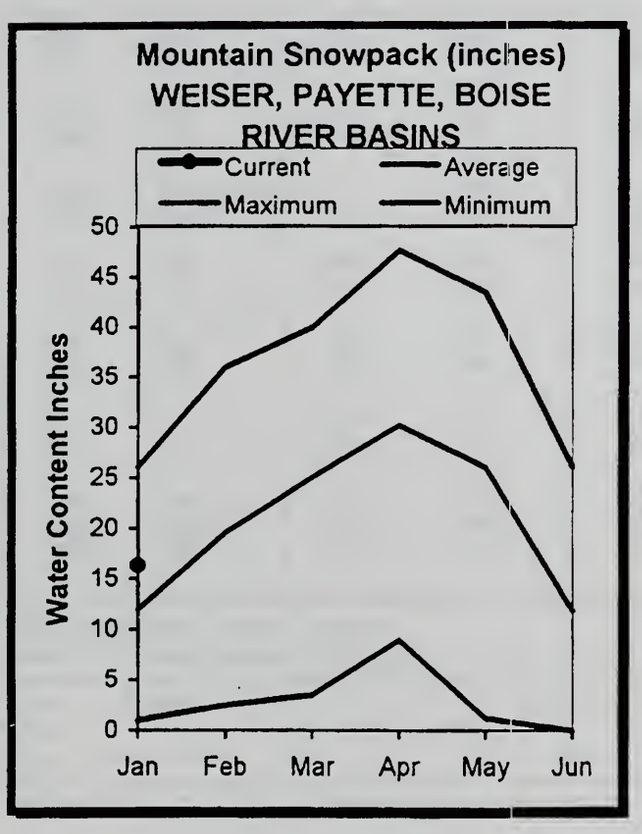
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	226	124
Lemhi River	4	162	116
Middle Fork Salmon River	3	233	130
South Fork Salmon River	3	237	157
Little Salmon River	4	239	163
Salmon Basin Total	23	210	138

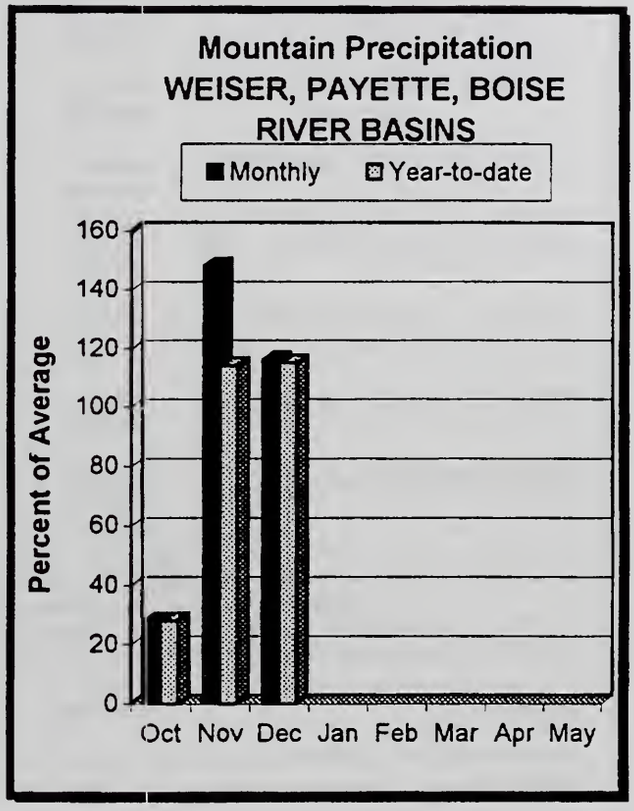
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

Snowpack in the Payette basin got of to a quick start while warmer temperatures brought rain to mid-elevation areas in the Boise basin. As of January 1, snow water equivalent data at Squaw Flat and Brundage Reservoir SNOTEL sites were the 2nd and 4th highest, respectively, since records started in 1961. The headwaters of the North Fork Payette, Little Salmon, South Fork Salmon, Weiser and Mann basins host the highest snowpacks in the state at 160% of average. Boise basin snowpack is 120% of average. Clear and cold temperatures in mid-December gave way to nearly a week of consecutive precipitation falling in the mountains. December precipitation was 116% of with the majority falling the last week of December. Streamflow forecasts range from 126% of average in the North Fork Payette River to near average in the Boise basin. Reservoir storage is 65-75% of capacity, about 120% of average. Water supplies should be adequate for the many users this summer.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<=== Drier ===== Future Conditions ===== Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER nr Weiser (1)	APR-JUL	271	439	515	133	591	759	386
	APR-SEP	294	473	555	134	637	816	415
SF PAYETTE at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	97	129	144	107	159	191	135
	APR-SEP	103	137	152	106	167	201	143
NF PAYETTE nr Cascade (1,2)	APR-JUL	412	558	625	126	692	838	496
	APR-SEP	433	589	660	124	731	887	533
NF PAYETTE nr Banks (2)	APR-JUL	588	723	815	126	907	1042	648
	APR-SEP	617	759	855	124	951	1093	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	1278	1746	1959	121	2172	2640	1618
	APR-SEP	1401	1895	2120	121	2345	2839	1755
BOISE near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	686
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	322	482	555	102	628	788	544
	APR-SEP	349	516	592	102	668	835	582
MORES CREEK near Arrowrock Dam	APR-JUL	86	115	134	104	153	182	129
	APR-SEP	91	120	140	105	160	189	134
BOISE near Boise (1,2)	APR-JUN	828	1164	1316	104	1468	1804	1264
	APR-JUL	917	1318	1500	106	1682	2083	1421
	APR-SEP	1006	1426	1616	105	1806	2226	1535

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	3.9	1.7	3.6
CASCADE	703.2	488.6	543.8	420.4
DEADWOOD	161.9	123.8	127.4	73.5
ANDERSON RANCH	464.2	390.7	427.5	306.5
ARROWROCK	286.6	176.8	181.8	184.3
LUCKY PEAK	293.2	113.9	111.5	89.3
LAKE LOWELL (DEER FLAT)	177.1	110.3	114.7	113.7

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 1999

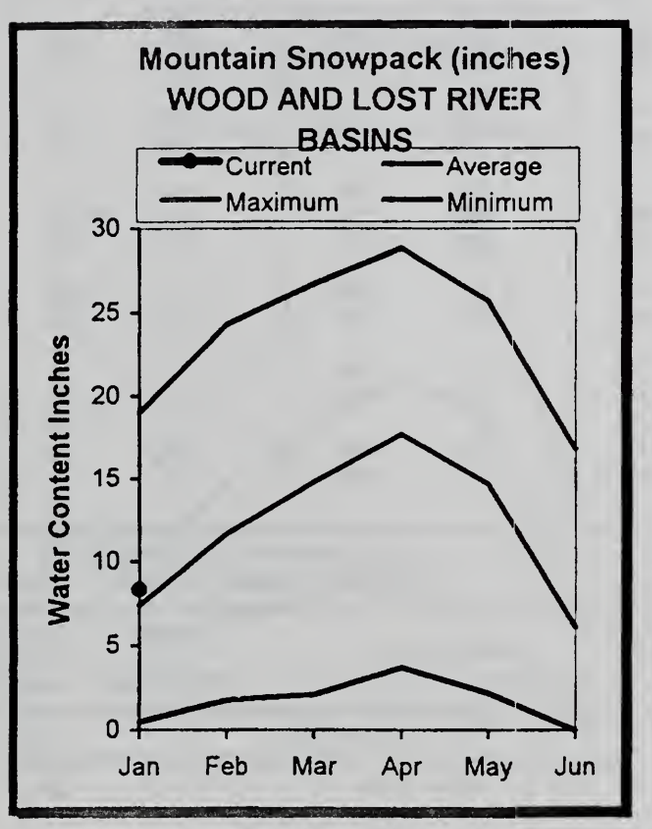
Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Mann Creek	1	209	159
Weiser River	3	232	165
North Fork Payette	8	223	164
South Fork Payette	4	234	122
Payette Basin Total	13	223	147
Middle & North Fork Boise	6	220	120
South Fork Boise River	7	214	114
Mores Creek	4	222	139
Boise Basin Total	13	219	120
Canyon Creek	1	0	65

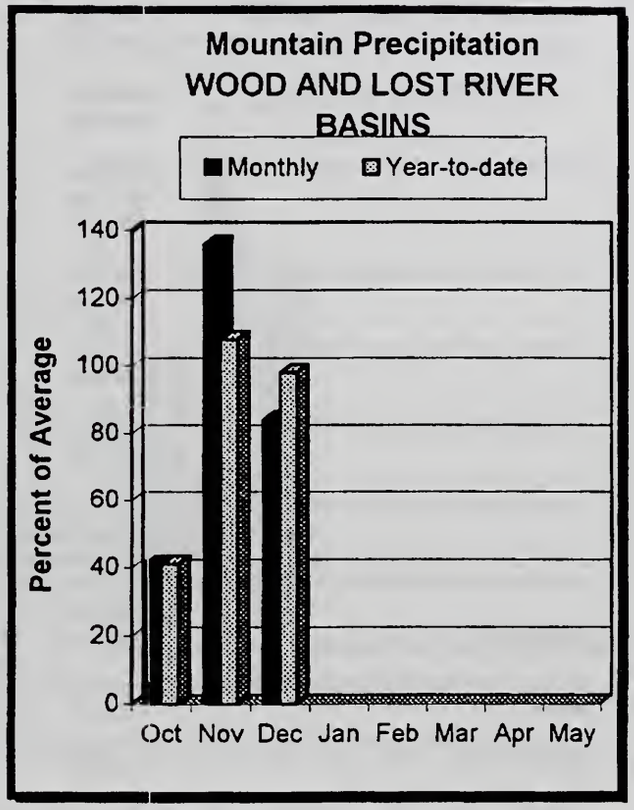
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

December precipitation was near normal as is the water year to date precipitation in these central Idaho mountains. Snowpacks are above normal ranging from 111% of average in the Little Wood basin to 128% in the Big Lost basin. Reservoir storage is above average as a result of last year's above normal runoff. Magic Reservoir is 156% of average, Little Wood Reservoir is 144%, and Mackay Reservoir is 118%. Streamflow forecasts call for near normal streamflow volumes this summer. With more than half the snow season still to come, water supplies should be adequate as a result of the above normal snow and reservoir storage.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	129	212	250	98	288	371	255
	APR-SEP	140	233	275	95	317	410	289
BIG WOOD near Bellevue	APR-JUL	79	135	174	95	213	269	183
	APR-SEP	90	148	188	95	228	286	197
CAMAS CREEK near Blaine	APR-JUL	35	60	80	78	103	143	102
	APR-SEP	36	61	81	79	104	144	103
BIG WOOD below Magic Dam (2)	APR-JUL	138	221	277	94	333	416	295
	APR-SEP	153	237	295	95	353	437	310
LITTLE WOOD near Carey (2)	MAR-JUL	53	86	108	108	130	163	100
	MAR-SEP	58	92	115	107	138	172	108
BIG LOST at Howell Ranch	APR-JUN	104	134	154	109	174	204	141
	APR-JUL	126	168	197	109	226	268	181
	APR-SEP	147	193	225	109	257	303	206
BIG LOST below Mackay Reservoir (2)	APR-JUL	95	136	164	108	192	233	152
	APR-SEP	122	167	197	107	227	272	184
LITTLE LOST blw Wet Creek	APR-JUL	25	30	34	108	37	42	31
	APR-SEP	31	38	42	108	47	53	39
LITTLE LOST nr Howe (Disc)	APR-JUL	27	31	34	102	37	41	33
	APR-SEP	35	40	44	102	48	53	43

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	128.3	145.3	82.1
LITTLE WOOD	30.0	19.2	20.2	13.3
MACKAY	44.4	30.0	24.4	25.4

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - January 1, 1999

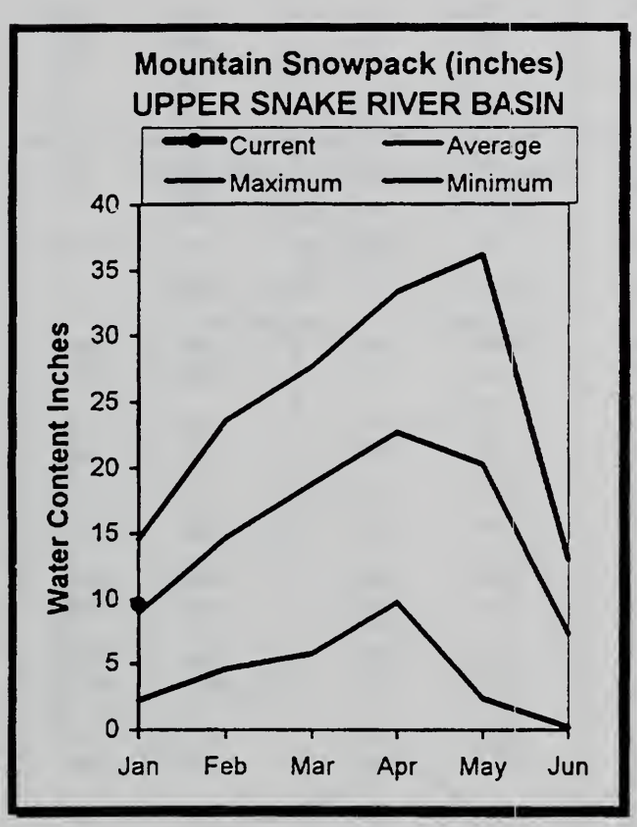
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	9	215	113
Camas Creek	3	234	116
Big Wood Basin Total	11	216	113
Little Wood River	3	226	111
Fish Creek	0	0	0
Big Lost River	5	206	128
Little Lost River	3	237	122

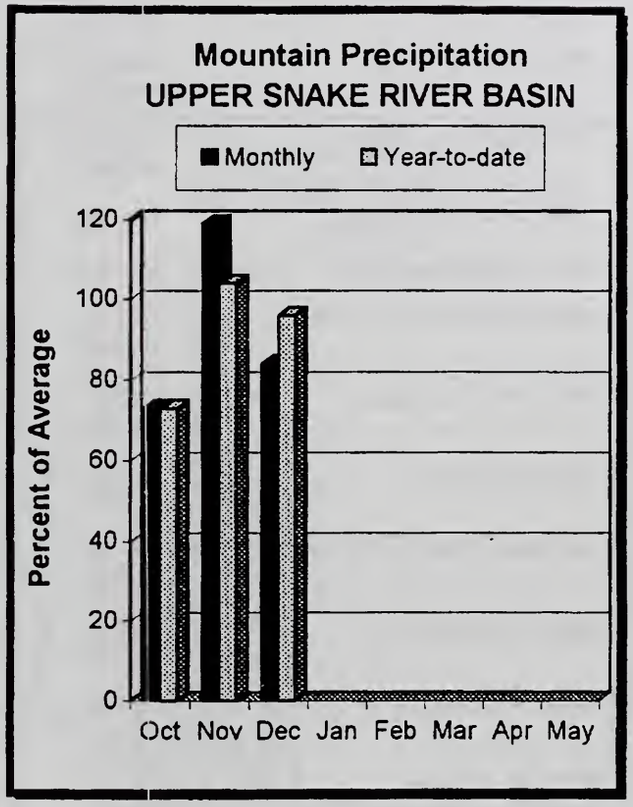
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

Near normal summarizes the current water supply conditions in the upper Snake basin. Snowpack ranges from a high of 116% of average in the Henrys Fork-Falls River basin to 85% in the Teton basin. Overall, snowpack in the Snake River above American Falls Reservoir is 102% of average. December precipitation was 84% of average; cumulative precipitation for the water year is near normal at 96% of average. Combined storage for the 8 major reservoirs is 118% of average which is 75% of capacity. Streamflow forecasts range from 95-105% of average. As a result of good carryover storage and near normal snowpacks, water supplies should be adequate this season; however, conditions could change with more than half the snow season still to come.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<=== Drier === Future Conditions === Wetter ===>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	454	509	547	101	585	640	544
	APR-SEP	630	696	740	101	784	850	730
HENRYS FORK near Rexburg (2)	APR-JUL	914	1084	1200	98	1316	1486	1228
	APR-SEP	1197	1389	1520	98	1651	1843	1551
FALLS near Squirrel (1,2)	APR-JUL	294	353	380	104	407	466	364
	APR-SEP	360	428	458	106	488	556	432
TETON near Driggs	APR-JUL	88	118	139	91	160	190	152
	APR-SEP	120	157	182	92	207	244	199
TETON near St. Anthony	APR-JUL	251	315	359	95	403	467	377
	APR-SEP	312	385	435	95	485	558	457
SNAKE near Moran (1,2)	APR-SEP	654	816	890	102	964	1126	869
PACIFIC CREEK at Moran	APR-SEP	129	155	173	104	191	217	166
SNAKE above Palisades (2)	APR-JUL	1960	2264	2470	107	2676	2980	2311
	APR-SEP	2285	2626	2858	107	3090	3431	2671
GREYS above Palisades	APR-JUL	225	284	325	98	366	425	333
	APR-SEP	265	330	375	97	420	485	388
SALT near Etna	APR-JUL	183	253	300	94	347	417	319
	APR-SEP	246	326	380	95	434	514	399
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	2362	3021	3320	103	3619	4278	3226
	APR-SEP	2732	3473	3810	101	4147	4888	3763
SNAKE near Heise (2)	APR-JUL	2720	3196	3520	102	3844	4320	3451
	APR-SEP	3187	3731	4100	101	4469	5013	4049
SNAKE nr Blackfoot (1,2)	APR-JUL	3091	4129	4600	104	5071	6109	4444
	APR-SEP	4008	5172	5700	104	6228	7392	5482
PORTNEUF at Topaz	MAR-JUL	63	76	84	98	93	106	86
	MAR-SEP	78	94	104	97	114	130	107
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	1550	2595	3070	100	3545	4590	3066
	APR-SEP	1600	2769	3300	100	3831	5000	3303

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	52.0	89.6	77.4
ISLAND PARK	135.2	114.5	111.3	89.4
GRASSY LAKE	15.2	12.6	8.2	10.5
JACKSON LAKE	847.0	590.0	644.3	470.2
PALISADES	1400.0	1207.3	1308.4	1036.0
RIRIE	80.5	37.9	37.3	33.8
BLACKFOOT	348.7	262.3	260.1	227.7
AMERICAN FALLS	1672.6	1173.0	1130.4	974.0

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 1999

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Camas-Beaver Creeks	4	203	92
Henrys Fork River	10	163	116
Teton River	7	125	85
Snake above Jackson Lake	9	149	112
Gros Ventre River	2	143	107
Hoback River	5	167	94
Greys River	3	177	93
Salt River	3	160	97
Snake above Palisades	21	156	105
Willow Creek	7	150	98
Blackfoot River	3	162	92
Portneuf River	2	129	88
Snake abv American Falls	31	153	102

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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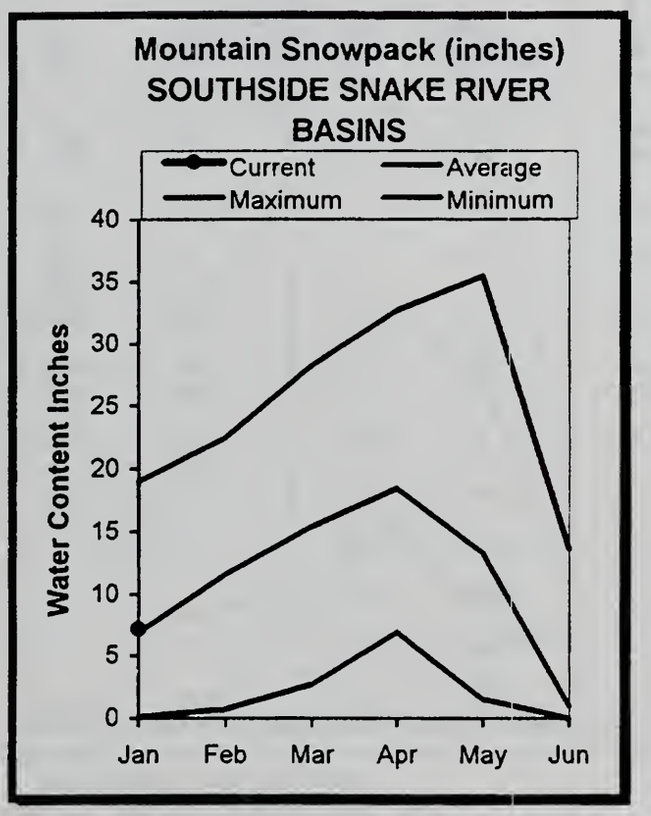
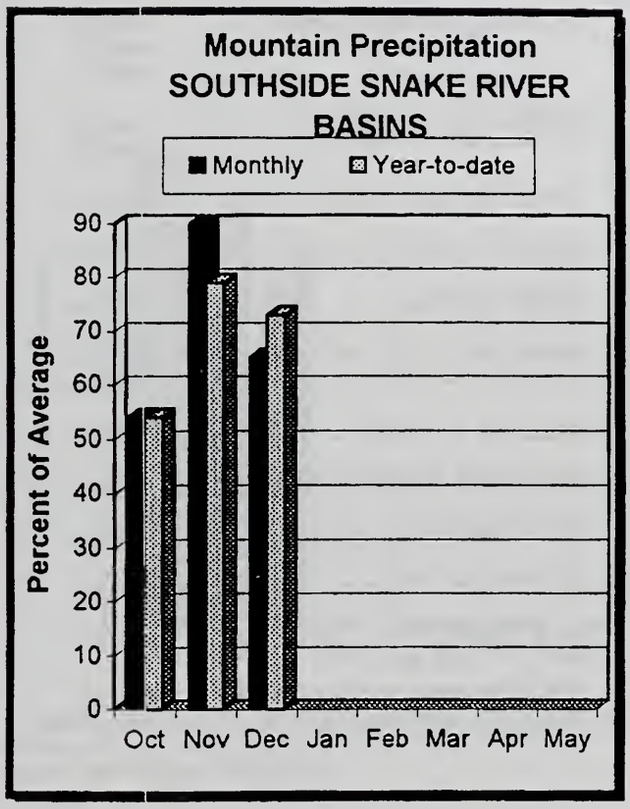
SOUTHSIDE SNAKE RIVER BASINS JANUARY 1, 1999





WATER SUPPLY OUTLOOK

A dry and cool fall resulted in the first fall storms falling as snow instead of rain. October precipitation was half of normal, November brought precipitation in the 90% of average range, while December was only 65% of average, the lowest in the state. As a result, cumulative precipitation for the water year is only 3/4 of normal. However, the snowpacks range from 90-110% of average except in the Owyhee basin which is 81% of average. The deficit from lack of fall rains may be offset by fall baseflows that were near normal indicating that springs, soil moisture and groundwater sources are still providing good baseflows from the past four years of normal or above normal moisture. Reservoir storage is above to well above average in these southern Idaho reservoirs. Streamflow forecasts range from 83% of average for Oakley Reservoir Inflow to 70% for Owyhee Reservoir Inflow. Even if the minimum forecast (90% Chance of Exceeding) materializes, water supplies should still be adequate in Oakely and Salmon Falls basins due to good carryover storage.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAR-JUL	15.1	22	27	83	33	43	33
	MAR-SEP	17.0	24	30	83	36	47	36
OAKLEY RESV STORAGE	FEB-28	41	43	44	154	46	48	29
	MAR-31	45	48	50	151	52	55	33
	APR-30	49	53	56	146	58	62	38
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	40	57	70	81	84	108	86
	MAR-JUL	42	60	74	81	89	114	91
	MAR-SEP	46	64	78	81	94	119	96
SALMON FALLS RESV STORAGE	FEB-28	76	79	82	149	84	88	55
	MAR-31	80	87	92	144	97	104	64
	APR-30	95	104	111	134	117	127	83
BRUNEAU near Hot Springs	MAR-JUL	108	150	183	78	219	277	235
	MAR-SEP	114	158	192	78	229	290	246
OWYHEE near Gold Creek (2)	MAR-JUL	3.4	12.0	17.9	57	24	32	31
OWYHEE nr Owyhee (2)	APR-JUL	0.9	29	50	58	71	102	86
OWYHEE near Rome	FEB-JUL	176	304	410	66	532	741	622
OWYHEE RESV INFLOW (2)	FEB-JUL	221	353	460	70	581	785	656
	FEB-SEP	238	371	479	70	600	803	684
SUCCOR CK nr Jordan Valley	FEB-JUL	8.6	15.7	21	127	25	32	16.2
SNAKE RIVER at King Hill (1,2)	APR-JUL			2660	92			2896
SNAKE RIVER near Murphy (1,2)	APR-JUL			2750	92			2980
SNAKE RIVER at Weiser (1,2)	APR-JUL			5300	97			5465
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL			6110	100			6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	12927	20404	23800	110	27196	34673	21650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	77.4	39.6	38.4	22.6
SALMON FALLS	182.6	76.5	71.7	46.7
WILDHORSE RESERVOIR	71.5	53.3	53.5	30.5
OWYHEE	715.0	480.3	438.0	421.0
BROWNLEE	1419.3	1348.2	1356.0	1275.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 1999

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	180	108
Goose-Trapper Creeks	2	197	105
Salmon Falls Creek	4	140	102
Bruneau River	5	131	91
Owyhee Basin Total	8	167	81

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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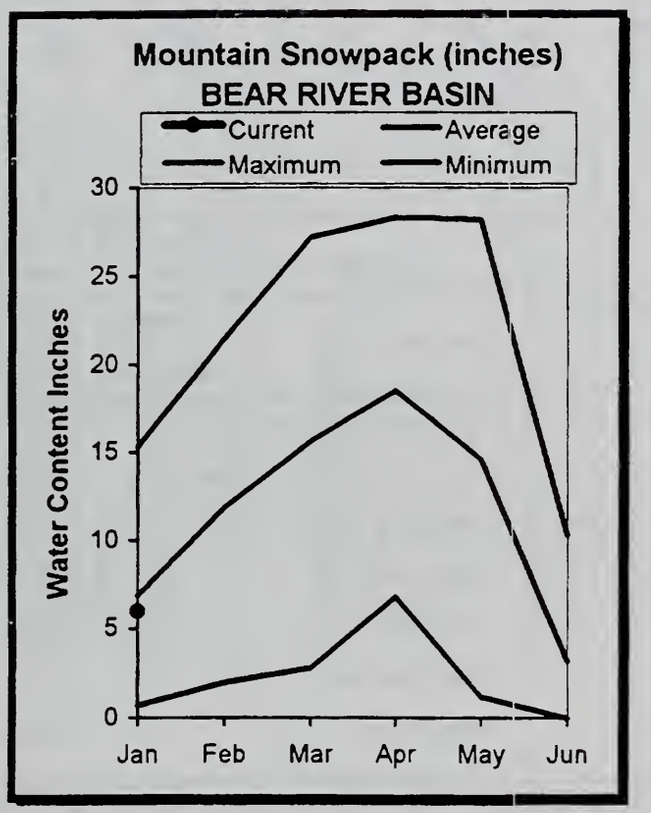
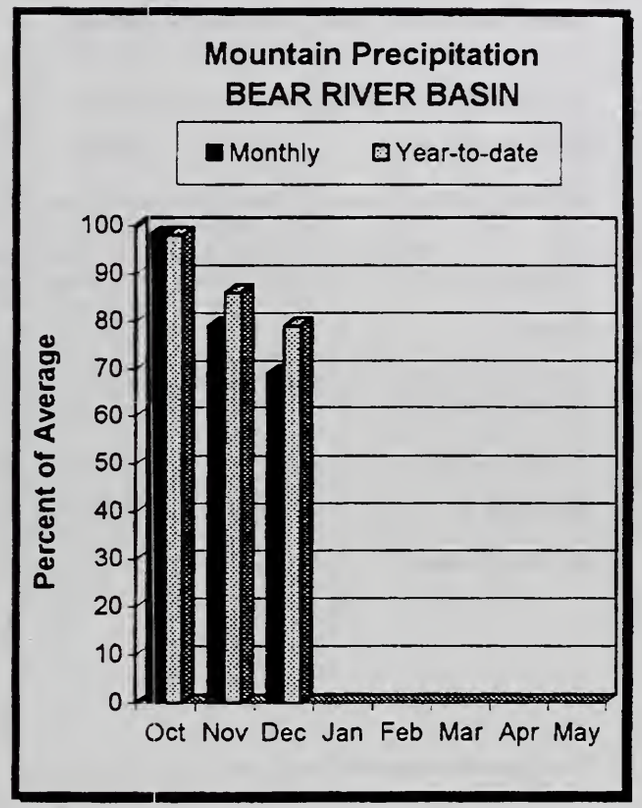
BEAR RIVER BASIN
JANUARY 1, 1999





WATER SUPPLY OUTLOOK

December brought only 2/3s the normal amount of precipitation. Precipitation for the water year is 79% of average. The Bear River basin hosts the lowest snow water content levels in Idaho at 76% of average. Snowpack percentages range from a high of 92% of average in the Smith and Thomas Forks to 74% in the headwaters of the Bear River in Utah and Wyoming. On the positive side, reservoir storage is in good shape: Bear Lake is 80% of capacity, 116% of average, and Montpelier Creek Reservoir is 55% of capacity, 129% of average. Streamflow forecasts call for slightly below normal runoff and range from 70-85% of average in the Bear basin. With more than half the snow season still to come, conditions could change. If winter precipitation remains below normal the carryover storage will help buffer below normal streamflows volumes on the Bear River.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 1999

Forecast Point	Forecast Period	<<=== Drier ===== Future Conditions ===== Wetter ===>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr Randolph, UT	APR-JUL	1.0	48	80	68	112	160	118
	APR-SEP	1.0	51	86	68	121	172	127
SMITHS FK nr Border, WY	APR-JUL	51	70	87	85	108	150	102
	APR-SEP	60	81	100	85	123	167	118
THOMAS FK nr WY-ID State Line (Disc)	APR-JUL	10.6	16.8	23	70	31	50	33
	APR-SEP	11.9	18.5	25	69	34	52	36
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	85	153	200	69	247	315	288
	APR-SEP	100	175	227	69	279	354	327
MONTPELIER CK nr Montpelier (Disc)(2	APR-SEP	6.2	8.3	10.1	71	12.3	16.4	14.2
CUB R nr Preston	APR-JUL	22	33	40	85	47	58	47

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
WOODRUFF NARROWS	57.3	43.0	46.0	---
WOODRUFF CREEK	4.0	3.8	3.9	---
BEAR LAKE	1421.0	1139.9	1127.3	982.0
MONTPELIER CREEK	4.0	2.2	2.9	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 1999

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	2	142	92
Bear River ab WY-ID line	7	121	74
Montpelier Creek	1	181	81
Mink Creek	1	162	80
Cub River	1	121	86
Bear River ab ID-UT line	12	127	76
Malad River	1	97	78

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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(2) - The value is natural flow - actual flow may be affected by upstream water management.

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised October 1998)

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

LITTLE LOST R NR HOWE, ID - No Corrections (Disc)

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ ALL CORRECT MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR
+ WILDHORSE RESV (STORAGE CHANGE)
+ JORDAN VALLEY RESV (STORAGE CHANGE)
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1000 acre-feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage.

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE+ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE+ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	--	8.00	169.10	--	177.1	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	77.4	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflows are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include.

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Deeth between March 1 and July 31.

Using the Higher Exceedance Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

UPPER HUMBOLDT RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	FUTURE CONDITIONS — DRIER ... WETTER — Chance of Exceeding						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG)	30% (1000AF)	10% (1000AF)	25 YR (1000AF)
MARYS RIVER nr Deeth	MAR-JUL	5.0	20.0	36	77	52	76	47
	APR-JUL	8.0	17.0	31	74	45	67	42
LAMOILLE CREEK nr Lamoille	MAR-JUL	6.0	16.0	24	79	32	43	31
	APR-JUL	4.0	15.0	22	75	30	41	30
NR HUMBOLDT RIVER at Devils Gate	MAR-JUL	6.0	12.0	43	73	74	121	59

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts"

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